

D. MAYDAY

General Background: MAYDAY

The term MAYDAY is used to indicate when a member on the fireground is in a life-threatening situation and needs immediate assistance. The national standard for MAYDAY is found in NFPA 1500 Section 8.2.4.3, which permits MAYDAY declarations, "by any member who is in or who becomes aware of a member who is in a life-threatening situation and in need of immediate assistance." In addition to the NFPA standard, the Maryland Fire Service Health and Safety Consensus Standard from the Maryland Occupational Safety and Health (MOSH) defines a MAYDAY situation as an, "... emergency distress signal indicating that one, or more, fire and rescue personnel is in need of emergency assistance."²²

Procedurally, a MAYDAY message begins with "MAYDAY, MAYDAY, MAYDAY," followed by an articulation of assistance needed. NFPA 1561 Standard on Emergency Services and Incident Management System and Command Safety outlines the MAYDAY process, as well as the MOSH consensus standard.

²² MD. OCC. SAFETY. AND HEALTH: MARYLAND FIRE SERVICE HEALTH AND SAFETY CONSENSUS STANDARD (MD. DEPT. LABOR, LICENSING, AND REG. 2002).

Policies and Standards Applicable to Howard County Department of Fire and Rescue Services: MAYDAY

MAYDAY is defined by HCDFRS [General Order 300.04 MAYDAY Situations](#) as, “a term used to alert the Incident Commander (IC) and other individuals that operating personnel are in a life-threatening situation.” Additionally, a MAYDAY can occur, “when personnel operating on the scene of an emergency incident find themselves in a life-threatening situation and require immediate assistance, they shall immediately declare a MAYDAY.” In declaring a MAYDAY, the firefighter is to transmit “MAYDAY, MAYDAY, MAYDAY” followed by **who** is calling the MAYDAY, **what** the problem is, and **where** the MAYDAY is located.²³

Additionally, the acronym LUNAR is included in the HCDFRS [General Order 300.04 MAYDAY Situations](#) as a guide for personnel to use in providing information to an incident commander. LUNAR is defined as:

- **Location** (last known location including floor number, quadrant, etc.)
- **Unit** (identification of the crew and their unit assignment)
- **Name** (name of the individuals that need rescue or recovery)
- **Assignment/Air** (the last known assignment and amount of air left in the cylinder)
- **Resources needed** (what equipment is needed to implement the rescue plan).

Also, [General Order 300.04 MAYDAY Situations](#) provides several examples of situations where a MAYDAY is appropriate, including falls through a roof or floor, self-contained breathing apparatus (SCBA) failure, medical emergency and/or a situation in which personnel cannot self-extricate within sixty (60) seconds.

Portable radios used by HCDFRS are designed with two emergency identifier buttons. There is an emergency identifier button on the lapel microphone and an identifier button on top of the portable radio. A firefighter transmitting a MAYDAY should activate the emergency identifier button to ensure the MAYDAY is acknowledged by the incident commander and Communications Center pursuant to HCDFRS [General Order 300.04 MAYDAY Situations](#) (11). Upon transmitting the MAYDAY, the firefighter shall manually activate their, “Personal Alert Safety System (PASS) to alert personnel within hearing range that an emergency situation exists.”

The Incident Commander’s actions at the declaration of a MAYDAY are a critical factor in the success of the Rapid Intervention Crew (RIC) operation. Incident Commanders must simultaneously acknowledge the MAYDAY, deploy the RIC, and request additional resources while still directing incident operations. The declaration of a MAYDAY with RIC deployment may alter, but cannot preclude, addressing other incident needs such as rescue and fire suppression activities. Pursuant to HCDFRS [General Order 300.04 MAYDAY Situations](#), an Incident Commander must, immediately following a MAYDAY transmission, acknowledge the individual

²³ Howard County Department of Fire and Rescue Services, General Order 300.04 MAYDAY Situations 12 (2013).

calling the MAYDAY, determine who is calling, what the problem is and where the emergency is taking place. Once that information is received the Incident Commander must request the emergency tone from Communications Center, declare a MAYDAY situation over the radio and repeat the who, what, and where of the emergency, at which point the Incident Commander will deploy the RIC. Additional resources may be requested by the Incident Commander to include additional personnel for continued fireground operations, establishing a second RIC, and have additional EMS units on stand-by. Under [General Order 300.04 MAYDAY Situations](#) the Incident Commander shall conduct a PAR of personnel operating in the hazard zone as soon as possible. At the completion of the MAYDAY operation, the Incident Commander shall resume normal operations and reassess incident priorities.

The Communications Center dispatchers are an essential component of the MAYDAY process once a MAYDAY has been declared. If the Incident Commander does not acknowledge the MAYDAY and the dispatcher hears the transmission, the dispatcher must immediately notify the Incident Commander. The dispatcher must then work with the Incident Commander to ensure requests are acknowledged and fulfilled. Pursuant to HCDFRS [General Order 300.04 MAYDAY Situations](#), Public Safety Communications – Actions and Responsibilities Section, “a channel marker will be activated on the priority channel to ensure personnel understand that an emergency has been declared.” The primary fireground channel will remain the priority channel for the MAYDAY operation. In the event a radio emergency identifier button is activated, the dispatcher shall notify the Incident Commander and provide any information regarding the activation. The Communications Center does not have the ability to differentiate between an emergency identifier button activation and an automatic man-down activation. The man-down activation alerts Communications Center of a potential emergency when any portable radio is left in a horizontal position (45 degrees or less) and not moved for four (4) minutes.²⁴

²⁴ During the course of this investigation, HCDFRS reprogrammed the radios to have the man-down activation pre-alert at 30 seconds and an alarm after another 45 seconds passes, for a total time of one minute and fifteen seconds.

Woodscape Drive Incident Overview: MAYDAY

At 02:15:30 Engine 51 and Tower 10 advised that they were unable to find the fire. Shortly thereafter, Engine 101A relayed to Command visible fire on the first level of Side C. In response to Engine 101A, the Incident Commander asked whether it was possible to, "hit the fire from the exterior." Engine 101A replied that they needed to redeploy their line back to the initial entrance, referring to the upper level of Side C although that was not clear to the Incident Commander.

During the communication between Engine 101A and Command there was uncertainty as to Engine 101A's position, with the Incident Commander asking for Engine 101A to confirm their location at 02:17:16. Tower 10A responded to Command's clarification request, stating that Engine 101 and Engine 51 were making entry in Quadrant 2 on the first floor with crews having made access to the basement, experiencing smoke conditions, and closing the basement door to restrict airflow. Tower 10A advised that the only crews operating on the first level of Side C should have been Engine 101 and Engine 51. At 02:18:29 the Incident Commander directed Truck 7 to assume RIC duty and that they have Engine 51, Engine 101 and Tower 10 entering on Side C.

At 02:20:11 Engine 101A declared MAYDAY, although it was unclear to the Incident Commander whether it was Engine 101A or Engine 101B having a MAYDAY emergency. Engine 101A's MAYDAY transmission was immediately acknowledged by the Incident Commander. Engine 101A's second MAYDAY transmission was also partially unrecognizable. This contributed to confusion in determining the nature of the MAYDAY emergency. The Communications Center advised Command that the transmission was from Engine 101A. The Incident Commander deployed RIC to Side C to begin RIC operations. Once RIC was directed to Side C, the Incident Commander immediately attempted to obtain the Who-What-Where of the MAYDAY emergency from Tower 10A. Engine 51A and Tower 10A simultaneously attempted to notify the Incident Commander that they were trying to find Engine 101A. The Incident Commander initially believed Engine 101A had fallen through the floor. It was not until 02:24:05 that the Incident Commander ascertained FF Flynn (Engine 101B) as the person in distress. A second alarm was requested by the Incident Commander. Engine 71 was assigned to supplement Truck 7 as part of the RIC.

Findings and Recommendations: MAYDAY

First, a review of all radio transmissions from the incident revealed that FF Flynn transmitted a MAYDAY on Bravo 2 talk group. This incident was assigned and operating on the Bravo 1 talk group. FF Flynn had his radio operating on Bravo 2 in scan mode; this would have led FF Flynn to reasonably believe that he was operating on Bravo 1 talk group since he could hear all Bravo 1 transmissions with the exception of when his portable radio was transmitting on Bravo 2 talk group. FF Flynn's MAYDAY transmission was made at 02:21:05. His transmission went unnoticed by personnel on the fireground, Incident Command, and the Communications Center. In addition, another transmission was made on the Bravo 1 talk group simultaneously to FF Flynn's transmission on Bravo 2. The simultaneous transmission to FF Flynn's MAYDAY at 02:21:05 was Engine 101A's transmission following up her initial MAYDAY transmission to the Incident Commander. This simultaneous transmission on Bravo 1 prevented anyone with a radio scan feature activated and operating on the Bravo 1 talk group from hearing FF Flynn's MAYDAY transmission on the Bravo 2 talk group.

Aside from being on the wrong talk group, FF Flynn's MAYDAY transmission aligned with [General Order 300.04 MAYDAY Situations](#). Based on information obtained from FF Flynn's radio, his radio was operating on scan mode on Talk Group Bravo 2. Although there is no evidence that FF Flynn transmitted a "MAYDAY, MAYDAY, MAYDAY," based on FF Flynn's subsequent transmissions on Bravo 2, FF Flynn presumably heard Engine 101A's articulation of "MAYDAY, MAYDAY, MAYDAY" on Bravo 1. The Incident Commander attempted to clarify the MAYDAY situation with the assistance of the Communication Center, believing that Engine 101A was in distress. The Incident Commander transmitted, "Engine 101, go ahead with your MAYDAY," to which FF Flynn transmitted on Bravo 2 his name, location, and status as specified in [General Order 300.04 MAYDAY Situations](#).²⁵ Simultaneous with FF Flynn's transmission on Bravo 2, Engine 101A made a MAYDAY related transmission on Bravo 1, preventing his transmission from being heard.

Second, there was an activation on Bravo 2 from FF Flynn's portable radio at 02:19:45 without any verbal transmission. The exact cause of this transmission is unknown, but it is known that there was an activation of the push-to-talk button on the portable radio of FF Flynn. FF Flynn's radio was operating on the Bravo 2 talk group in the scan mode during this activation. Engine 101A transmitted the initial MAYDAY which shortly followed this activation.

Third, Engine 101A transmitted a MAYDAY on behalf of FF Flynn at 02:20:11 on Bravo 1. While Engine 101A's "MAYDAY, MAYDAY, MAYDAY" was transmitted in an understandable voice, a majority of the remaining transmission was unintelligible. Engine 101A made two additional radio transmissions directly connected to the MAYDAY declaration. One transmission was made at 02:20:31, where she stated, "101 is in the basement now, I believe he's in the basement now." The next transmission was at 02:21:05, where she states, "He's in the basement," followed by an

²⁵ In respect to the wishes of FF Flynn's family, the exact words FF Flynn transmitted during the MAYDAY are not included in this report.

incomprehensible statement, then “go through the basement.” The Incident Commander, after Engine 101A’s 02:20:31 hours transmission, acknowledged the MAYDAY at 02:20:47 stating, “101A I’ve got you on the MAYDAY,” and deployed the RIC.

In taking these steps, Engine 101A followed the policy set in HCDFRS [General Order 300.04 MAYDAY Situations](#) for declaring a MAYDAY for a firefighter she believed required assistance and was unable to declare a MAYDAY themselves. However, the transmission she made that followed the initial MAYDAY statement was unintelligible. This led to confusion on the part of the Incident Commander as to who needed assistance, what assistance was needed and where the assistance was needed. The Incident Commander initially believed it was Engine 101A that had fallen through the floor, into a sub-basement, and was experiencing the emergency. Not until 02:24:05 was the Incident Commander given the information that confirmed it was FF Flynn that fell through the first floor and into the basement. This confusion was exacerbated by the lack of crew integrity, which made it difficult to account for all firefighters operating within the hazard zone and identify the number and location of firefighters requiring assistance.

Fourth, there is evidence that FF Flynn completed the actions recommended to take while awaiting rescue in line with [General Order 300.04 MAYDAY Situations](#). While waiting for RIC, FF Flynn never removed his SCBA face-piece and data from FF Flynn’s SCBA supports that he attempted to self-extricate. FF Flynn did not change radio channels, presumably because he believed that he was operating on Bravo 1.

Fifth, the Incident Commander worked to ascertain the MAYDAY situation and direct RIC to begin operations, but the efforts were complicated by a lack of crew integrity. FF Flynn was not identified as the person with a MAYDAY emergency until 02:24:05. Numerous factors led to this confusion, including the original MAYDAY transmission by Engine 101A that was partially unintelligible and FF Flynn’s MAYDAY related transmission on Bravo 2. Other units could not initially confirm who was missing while operating in zero-visibility conditions. Once it was confirmed by Incident Command who was missing, a PAR was requested from the Charlie Division Supervisor for Engine 51 and Tower 10. This PAR was requested at 02:26:15. As discussed in [Section III. A Incident Command](#) of this report, Incident Commander could not account for all the members assigned to Engine 51 until 02:28:41.

Sixth, the entire first alarm assignment was not on location and in position per HCDFRS [General Order 310.01 Single Family and Townhouse Structure Fire Operational Guidelines](#). This contributed to resources being redeployed to supplement the RIC. As units from the Task Force and Second Alarm assignment arrived on location, the Incident Commander assigned units to establish a second RIC. The second RIC was assigned at 02:39:29. The second RIC consisted of Engine 61, Engine 91 and Engine 22. These units were directed to position on Side C. Engine 22 had already been deployed to assist the first RIC by Charlie Division Supervisor, although the radio assignment occurred at this time.

Seventh, Incident Command ensured that non-essential radio traffic was minimized. Units operating on the scene maintained exceptional radio discipline to keep radio traffic to essential

transmissions only. Face-to-face communications were used whenever possible to keep traffic to a minimum. At 02:13:01, prior to the MAYDAY transmission, the Incident Commander assigned Battalion Chief 2 to assume the Charlie Division upon arrival. Throughout the MAYDAY emergency, Incident Command communicated directly with Charlie Division (Battalion Chief 2) and RIC (Truck 7A). There was not a need at the time of the MAYDAY emergency for the Incident Commander to assign units to another tactical talk group. This was the result of companies not being able to locate the fire at the time of the MAYDAY emergency and the lack of resources available to engage in other operational activities. Units assigned to staging were assigned to operate on the Bravo 6 talk group, however all units in staging were re-assigned to report to the scene to assist with the MAYDAY emergency by the Incident Commander.

Eighth, the Communications Center does not have a separate policy for MAYDAY situations, instead its duties are outlined in [General Order 300.04 MAYDAY Situations](#). Under [General Order 300.04 MAYDAY Situations](#), the Communications Center dispatchers are to monitor fireground radio talk groups and notify the Incident Commander when the dispatcher recognizes that an emergency exists.

At the time the MAYDAY Emergency was transmitted, there was not a Fire Liaison present in the Communications Center. This prevented the dispatchers from having the ability to immediately request guidance from an HCDFRS officer. The dispatcher on the Bravo 1 talk group, to the best of their ability, attempted to assist the Incident Commander in determining what the emergency was and who was calling the emergency. The dispatcher quickly confirmed to the Incident Commander that Engine 101A was the individual calling the MAYDAY.

The dispatcher activated the channel marker less than ninety (90) seconds after the MAYDAY per HCDFRS [General Order 300.04 MAYDAY Situations](#). The channel marker remained activated until 02:47:03, after all units were reported PAR and the incident strategy transitioned to a defensive strategy. At 02:33:12 hours the Communications Center received the emergency identifier from FF Flynn on Bravo 2. The dispatcher immediately notified the Incident Commander of this activation, although they did not inform the Incident Commander that FF Flynn was operating on Bravo 2. Incident Command immediately attempted to contact FF Flynn on Bravo 1 upon notification of the activation from the dispatcher. The dispatcher also attempted to contact FF Flynn on Bravo 2 at 02:33:47. There was no response from FF Flynn.

In reviewing the incident with Communication Center staff, the dispatcher did not recognize that FF Flynn was operating on Bravo 2. Between the stress of the incident and task saturation among the dispatchers during the emergency, the dispatcher immediately acknowledged the transmission on Bravo 2 without realizing that the acknowledgement was on Bravo 2 instead of Bravo 1. The immediate acknowledgement was to quiet the audible alarm in the Communications Center associated with the emergency identifier.

Findings	Recommendations
<p>D.1 FF Flynn transmitted a MAYDAY call, but it was unheard by the fireground personnel and Communications Center because it was on the unmonitored Bravo 2 talk group.</p>	<p>D.1.1 Prior to entering an IDLH environment, firefighters must verify that they are operating on the appropriate talk group.</p> <p>D.1.2 HCDFRS must reprogram its radios to have the emergency identifier button revert the firefighter experiencing a MAYDAY to the monitored talk group (e.g. Bravo 1). This should prompt the Communications Center to monitor all transmissions in the monitored talk group.</p> <p>D.1.3 HCDFRS must require Incident Commanders to confirm the operational channel with the individual calling the MAYDAY. The Incident Commander shall advise the individual to visually check their portable radio, if possible. Additionally, the Communications Center or Incident Commander on Bravo 7 should instruct a firefighter experiencing a MAYDAY emergency to press their emergency identifier.</p>
<p>D.2 Engine 101A's MAYDAY transmission was partially unintelligible, with the Incident Commander unable to ascertain who, what, where portions of the transmission.</p>	<p>D.2.1 Personnel must have consistent training on how to clearly make a MAYDAY transmission for themselves or others. This training should be done while the individual is in a high-stress environment and tasked with this responsibility.</p>
<p>D.3 The Incident Commander attempted to ascertain the necessary MAYDAY details, but due to a number of factors was not able to identify FF Flynn's distress and location until 02:24:05, at least four (4) minutes after FF Flynn fell through the floor.</p>	<p>D.3.1 Incident Commanders and officers must train on ways to clarify unclear MAYDAY transmissions, providing reassurance to individuals as appropriate. This training should also include processes for the Incident Commander to work with the Communications Center. This process includes having the Communication Center send emergency tones and announcing that a MAYDAY has been declared. The Incident Commander shall notify all personnel operating on</p>

Findings	Recommendations
	the incident <u>Who</u> is calling the MAYDAY, <u>What</u> the problem is, and <u>Where</u> the emergency is located.
D.4 While an evacuation tone sounded after the Incident Commander ordered an evacuation, the emergency tone did not sound after the Incident Commander announced a change of strategy.	D.4.1 HCDFRS must use separate tones for an emergency tone and an evacuation tone. These separate tones shall be easily differentiable, with personnel able to easily identify the tone and understand what is required of them when the tones are activated.
D.5 There is evidence that FF Flynn attempted to self-extricate while awaiting RIC support.	D.5.1 HCDFRS must conduct training on MAYDAY emergencies on a regular basis. This training should include a review HCDFRS General Order 300.04 MAYDAY Situations and practical evaluations. Practical evaluations shall give personnel the opportunity to transmit and receive a MAYDAY emergency while operating under simulated emergency conditions.